Complete Summary

GUIDELINE TITLE

Clinical policy: critical issues in the evaluation of adult patients presenting to the emergency department with acute blunt abdominal trauma.

BIBLIOGRAPHIC SOURCE(S)

Clinical policy: critical issues in the evaluation of adult patients presenting to the emergency department with acute blunt abdominal trauma. Ann Emerg Med 2004 Feb;43(2):278-90. [47 references] PubMed

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Acute blunt abdominal trauma

GUIDELINE CATEGORY

Evaluation

CLINICAL SPECIALTY

Emergency Medicine
Family Practice
Internal Medicine
Radiology

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

- To present evidence-based recommendations regarding the accuracies of computed tomography (CT), diagnostic peritoneal lavage, and focused abdominal sonography for trauma (FAST) in identifying various intra-abdominal injuries
- To address the following critical questions:
    - What is the diagnostic performance of CT in diagnosing significant intra-abdominal injuries requiring intervention in blunt abdominal trauma?
    - Does oral contrast improve the diagnostic performance of CT in blunt abdominal trauma?
    - What is the diagnostic performance of FAST in diagnosing hemoperitoneum in blunt abdominal trauma?
    - What is the diagnostic performance of diagnostic peritoneal lavage in diagnosing significant intra-abdominal injuries requiring intervention in blunt abdominal trauma?

TARGET POPULATION

Nonpregnant adult patients presenting to the emergency department with blunt force injuries to the abdomen (e.g., falls, direct abdominal blows, motor vehicle collisions)

These guidelines are <u>not</u> intended for use in the following types of patients:

- children
- pregnant women
- victims of penetrating abdominal injuries

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Evaluation

1. Computed tomography (CT) with and without oral contrast
2. Focused abdominal sonography for trauma (FAST)
3. Diagnostic peritoneal lavage

MAJOR OUTCOMES CONSIDERED

Sensitivity, specificity, and prognostic value of diagnostic tests

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A MEDLINE search for articles published between January 1966 and June 2002 was performed using the terms "abdominal injuries" and "abdominal trauma" in combination with the following: diagnosis, ultrasonography, peritoneal lavage, diagnostic peritoneal lavage, lavage, laboratory testing, and trauma panel. Other MEDLINE searches for articles published during the same time interval were performed using the following key words: tomography (x-ray computed); wounds (nonpenetrating); and injuries, in combination with the following key words: kidney, pelvis, ureter, and bladder. Searches were limited to English-language sources. Additional articles were reviewed from the bibliography of articles cited. Recent journals and standard texts were also examined for additional sources.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Literature Classification Schema^

Class 1

- Therapy*: Randomized, controlled trial or meta-analyses of randomized trials
- Diagnosis**: Prospective cohort using a criterion standard
- Prognosis***: Population prospective cohort

Class 2

- Therapy*: Nonrandomized trial
- Diagnosis**: Retrospective observational
- Prognosis***: Retrospective cohort; case control

Class 3

- Therapy*: Case series; case report; other (e.g., consensus, review)
- Diagnosis**: Case series; case report; other (e.g., consensus, review)
- Prognosis***: Case series, case report; other (e.g., consensus, review)

^ Some designs (e.g., surveys) will not fit this schema and should be assessed individually.

* Objective is to measure therapeutic efficacy comparing $\geq$2 interventions

** Objective is to determine the sensitivity and specificity of diagnostic tests

*** Objective is to predict outcome including mortality and morbidity

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

All articles used in the formulation of this policy were classified by the subcommittee members into 3 classes on the basis of design of study, with design 1 representing strongest evidence and design 3 representing weakest evidence for therapeutic, diagnostic, and prognostic clinical reports, respectively. Reports were then graded on 6 dimensions thought to be most relevant to the development of a clinical guideline: blinded versus nonblinded outcome assessment, blinded or randomized allocation, direct or indirect outcome measures, biases (e.g., selection, detection, transfer), external validity (generalizability), and sufficient sample size. Articles received a final grade (I, II, III) on the basis of a predetermined formula taking into account design and grade of study. Articles with fatal flaws were given an "X" grade and not used in the creation of this policy.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

This policy is a product of the American College of Emergency Physicians (ACEP) clinical policy development process, including expert review, and is based on the existing literature; where literature was not available, consensus of emergency physicians was used.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Clinical findings and strength of recommendations regarding patient management were made according to the following criteria:

Strength of Recommendations

Level A recommendations. Generally accepted principles for patient management that reflect a high degree of clinical certainty (i.e., based on "strength of evidence class I" or overwhelming evidence from "strength of evidence class II" studies that directly address all the issues)

Level B recommendations. Recommendations for patient management that may identify a particular strategy or range of management strategies that reflect moderate clinical certainty (i.e., based on "strength of evidence class II" studies that directly address the issue, decision analysis that directly addresses the issue, or strong consensus of "strength of evidence class III" studies)

Level C recommendations. Other strategies for patient management based on preliminary, inconclusive, or conflicting evidence or, in the absence of any published literature, based on panel consensus.

There are certain circumstances in which the recommendations stemming from a body of evidence should not be rated as highly as the individual studies on which they are based. Factors such as heterogeneity of results, uncertainty about effect magnitude and consequences, strength of prior beliefs, and publication bias, among others, might lead to such a downgrading of recommendations.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Expert review comments were received from emergency physicians, members of the American College of Emergency Physician's (ACEP's) Trauma Care and Injury Control Committee, leaders of ACEP's Section of Trauma and Injury Prevention, leaders of ACEP's Section of Emergency Ultrasound, and physicians from specialty societies, including individual members of the American College of Surgeons Committee on Trauma and the American Academy of Family Physicians. Their responses were used to further refine and enhance this policy.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions for the strength of evidence (Class I-III) and strength of recommendations (A-C) are repeated at the end of the Major Recommendations.

What is the diagnostic performance of computed tomography (CT) in diagnosing significant intra-abdominal injuries requiring intervention in blunt abdominal trauma?

- Level A recommendations. None specified.
- Level B recommendations. When either liver or spleen injury is suspected, CT can reliably exclude injuries that require emergent operative intervention. CT alone cannot be used to exclude either bowel, diaphragm, or pancreas injury.

  Abdominal CT accurately identifies hemoperitoneum among patients with blunt abdominal trauma.

- Level C recommendations. None specified.

Does oral contrast improve the diagnostic performance of CT in blunt abdominal trauma?

- Level A recommendations. None specified.
- Level B recommendations. Oral contrast is not essential to the evaluation of blunt abdominal trauma.
- Level C recommendations. None specified.

What is the diagnostic performance of focused abdominal sonography for trauma (FAST) in diagnosing hemoperitoneum in blunt abdominal trauma?

- Level A recommendations. None specified.
- Level B recommendations. FAST is useful as an initial screening examination to detect hemoperitoneum in blunt abdominal trauma patients.
- Level C recommendations. None specified.

What is the diagnostic performance of diagnostic peritoneal lavage in diagnosing significant intra-abdominal injuries requiring intervention in blunt abdominal trauma?

- Level A recommendations. None specified.
- Level B recommendations. Diagnostic peritoneal lavage can be used to exclude hemoperitoneum in blunt abdominal trauma patients. Diagnostic peritoneal lavage does not define the extent of injury, has a 1 to 2% complication rate, and may lead to nontherapeutic laparotomies.
- Level C recommendations. On the basis of consensus and current practice patterns, the initial choices for the evaluation of blunt abdominal trauma are CT and FAST, depending on the patient's hemodynamic stability.

Definitions:

Literature Classification Schema^

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* Objective is to measure therapeutic efficacy comparing ≥2 interventions

** Objective is to determine the sensitivity and specificity of diagnostic tests

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Strength of Recommendations

Level A recommendations. Generally accepted principles for patient management that reflect a high degree of clinical certainty (i.e., based on "strength of evidence class I" or overwhelming evidence from "strength of evidence class II" studies that directly address all the issues)

Level B recommendations. Recommendations for patient management that may identify a particular strategy or range of management strategies that reflect moderate clinical certainty (i.e., based on "strength of evidence class II" studies that directly address the issue, decision analysis that directly addresses the issue, or strong consensus of "strength of evidence class III" studies)

Level C recommendations. Other strategies for patient management based on preliminary, inconclusive, or conflicting evidence or, in the absence of any published literature, based on panel consensus.

There are certain circumstances in which the recommendations stemming from a body of evidence should not be rated as highly as the individual studies on which they are based. Factors such as heterogeneity of results, uncertainty about effect magnitude and consequences, strength of prior beliefs, and publication bias, among others, might lead to such a downgrading of recommendations.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- This guideline may help physicians in the evaluation of adult patients presenting to the Emergency Department (ED) with acute blunt abdominal trauma.
- Refer to the original guideline document for evidence tables outlining sensitivities, specificities, and prognostic values of diagnostic tests discussed in this guideline.

POTENTIAL HARMS

- False-negative results. Computed tomography (CT), focused abdominal sonography for trauma (FAST), and diagnostic peritoneal lavage can produce false-negative results.
- False-positive results. The false-positive rate for diagnostic peritoneal lavage is between 13 and 54%.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Recommendations offered in this policy are not intended to represent the only diagnostic and management options that the emergency physician should consider. The American College of Emergency Physicians (ACEP) clearly recognizes the importance of the individual physician's judgment. Rather, this guideline defines for the physician those strategies for which medical literature exists to provide support for answers to the crucial questions addressed in this policy.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Clinical policy: critical issues in the evaluation of adult patients presenting to the emergency department with acute blunt abdominal trauma. Ann Emerg Med 2004 Feb;43(2):278-90. [47 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004 Feb

GUIDELINE DEVELOPER(S)

American College of Emergency Physicians - Medical Specialty Society

SOURCE(S) OF FUNDING

American College of Emergency Physicians

GUIDELINE COMMITTEE

American College of Emergency Physicians (ACEP) Clinical Policies Subcommittee on Acute Blunt Abdominal Trauma

ACEP Clinical Policies Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

Clinical policies are scheduled for revision every 3 years; however, interim reviews are conducted when technology or the practice environment changes significantly.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American College of Emergency Physicians Web site.

Print copies: Available from the American College of Emergency Physicians, ACEP Customer Service Department, P.O. Box 619911, Dallas, TX 75261-9911, or call toll free: (800) 798-1822, touch 6.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on April 21, 2004. The information was verified by the guideline developer on May 27, 2004.

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